

FACT SHEET

Laboratory Hazardous Waste Benchtop Treatment

Benchtop treatment refers to a process used by research laboratories to perform authorized treatment of hazardous wastes per California regulations. Given in this fact sheet are the regulatory requirements and instructions for preparing a benchtop treatment procedure using a procedure template.

California Health and Safety Code Requirements:

- The laboratory hazardous waste is treated in containers using recommended procedures and quantities for treatment of laboratory wastes published by the National Research Council or procedures for treatment of laboratory wastes published in peer reviewed scientific journals.
- The laboratory hazardous waste is treated at a location that is close as is practical to the location where the laboratory hazardous waste is generated.
- Treatment of the laboratory hazardous waste is conducted within 10 calendar days after the date the laboratory hazardous waste is generated¹.
- The amount of laboratory hazardous waste treated in any single batch does not exceed the greater of five gallons or 18 kg OR if less than five gallons or 18 kg, the quantity limits recommended in the procedures published by National Research Council or in other peer reviewed scientific journals.²
- The laboratory hazardous waste treated is from a single procedure, or set of procedures that are part of the same laboratory process.
- The person performing the treatment has knowledge of the laboratory hazardous waste being treated, including knowledge of the procedure that generated the laboratory hazardous waste, and has received hazardous waste training, including how to conduct the treatment, manage treatment residuals, and respond effectively to emergency situations.
- Training records for all persons performing treatment of laboratory hazardous wastes are maintained for a minimum of three years.
- All treatment residuals and effluents are managed in accordance with applicable federal, state and local requirements.
- All records maintained by the laboratory pertaining to treatment are made available for inspection upon request by a representative of the department or the Certified Unified Program Agency (CUPA).
- For laboratory hazardous wastes that contain radioactive material, the laboratory waste treatment requirements apply in addition to, but do not supersede, applicable federal and state requirements governing the management of radioactive materials.

Instructions for Preparing a Benchtop Treatment Procedure:

Prior to preparing a new laboratory benchtop treatment procedure, you must read the Waste Management Group guideline **Laboratory Hazardous Waste Benchtop Treatment**. Ensure that the steps outlined in the guideline are completed as required and prepare the laboratory benchtop treatment procedure using the procedure template found under [Generator Resources on the Waste Management Group Home Page](#) or in **Attachment A** of **Laboratory Hazardous Waste Benchtop Treatment**. Specific information to include in the procedure is given here. Contact your [Generator Assistant](#) with any questions you may have.

¹ Treat wastes posing a safety hazard when placed in an SAA untreated as soon as possible following generation and before transfer to a SAA container.

² Some exceptions to these quantity limits are given in the regulations, but not included here.

Benchtop Treatment Procedure Template:

Section: Introduction

Discuss the purpose of the benchtop treatment in this section of the procedure. Describe

- the hazardous waste to be treated,
- where the treatment procedure will be performed (building and lab) and
- the quantity of waste to be treated in each treatment batch
- the time lapse between the expected dates of initial generation of a waste batch to be treated and the expected treatment date (no more than 10 days).

Section: Preparation for Treatment - Waste Description

Discuss the hazardous waste to be treated including

- a description of the process (including location) producing the waste,
- the hazardous properties of the waste (e.g., corrosive, reactive),
- the physical properties and form of the waste (e.g. solid or aqueous solution) and
- the waste constituents and concentrations

Attach results from any analytical testing performed on the waste to be treated.

Section: Preparation for Treatment - Training

EHS 348 (or EHS 353) and EHS 604 are required for personnel performing laboratory benchtop treatments. All personnel performing the treatment procedure must also have on-the-job training to the benchtop treatment procedure being used and which is to be documented using the training log in **Attachment A** of **Laboratory Hazardous Waste Benchtop Treatment**. Discuss:

- what training is required
- who will be trained to perform the treatment and who will be providing the on-the-job training
- the location where training records will be maintained

Section: Preparation for Treatment - Waste Disposal

Discharge of hazardous waste into the sanitary sewer system is prohibited. Written authorization to discharge any non-hazardous treatment residues to the sanitary sewer must be obtained from the [EHS Environmental Service Group \(ESG\)](#) prior to performing benchtop treatment. Treatment residues that have been approved by ESG for sanitary sewer discharge and contain only very short lived radioisotopes (<14 hours half-life) must also be authorized for discharge by the [Radiation Protection Group](#) through the Radiological Work Authorization (RWA) in use. Discuss in this section how and where treatment residuals will be accumulated and/or disposed.

Section: Precautions, Equipment, Supplies, and Containment

Discuss any precautions that must be observed when working with the hazardous wastes to be treated and other treatment reagents and equipment. Address environmental factors that should be considered (e.g., other work processes in the area). List all equipment to be used in the process and all personal protective equipment to be used. Discuss the primary container in which the waste will be treated and the secondary containment to be used. Discuss how you will prevent and manage any overflow of the treatment container during the process.

Section: Treatment Procedure

To treat hazardous waste using a benchtop treatment the treatment procedure steps must be based on a treatment procedure published in a peer-reviewed scientific journal. Use that published material as basis for the treatment procedure described here. Performance of the procedure must be documented using the treatment log in **Attachment A** (may be modified as necessary) of **Laboratory Hazardous Waste Benchtop Treatment**. Discuss here the step-by-step procedure, including;

- the setup,
- the reagents to be used,
- the rate of reagent addition,
- precautions to be observed,
- emergency response, and
- data to be recorded in the treatment log

Section: Applicable Documents

List applicable documents here. At a minimum this will include the benchtop treatment procedure training log, the treatment log, the sanitary sewer discharge authorization (if applicable), and the authorization by RPG (when applicable).

Section: References

List the references used in preparation of this procedure. At a minimum the source of the treatment procedure outlined in this procedure must be referenced here.

Once You Have Prepared a Benchtop Treatment Procedure:

Follow the instructions in **Laboratory Hazardous Waste Benchtop Treatment** for submittal, approval and use of the benchtop treatment procedure.